MPI—The Complete Reference: Volume 1, The MPI Core, Second edition. By Marc Snir, Steve Otto, Steven Huss-Lederman, David Walker and Jack Dongarra. MIT Press, Cambridge, MA. (1998). 426 pages. $35.00.
Contents:

Series foreword. Preface. 1. Introduction 2. Point-to-point communication. 3. User-defined datatypes and packing. 4. Collective communications. 5. Communicators. 6. Process topologies. 7. Environmental management. 8. The MPI profiling interface. 9. Conclusions. References. Constants index. Function index. Index.

MPI—The Complete Reference: Volume 2, The MPI-2 Extensions. By William Gropp, Steven Huss-Lederman, Andrew Lumsdaine, Ewing Lusk, Bill Nitzberg, William Saphir and Marc Snir. MIT Press, Cambridge, MA. (1998). 344 pages. $35.00.
Contents:

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Geometry of Vector Sheaves: An Axiomatic Approach to Differential Geometry. Volume I: Vector Sheaves. General Theory. By Anastosios Mallios. Kluwer Academic Publishers, Dordrecht. (1998). 441 pages. $350.00, NLG 650.00, GBP 220.00 for 2 volume set.
Contents:

General preface (to both Volumes I,II). Preface (to Volume I). Acknowledgements. Contents of Volume II. I. Vector sheaves. General theory. 1. Sheaf theory. 2. Sheaves and presheaves with algebraic structure. 3. Sheaf cohomology. 4. Linear and multilinear algebra of vector sheaves. 5. Vector sheaves and cohomology. Appendix. Category jargon. Bibliography. Notational index. Subject index.

Geometry of Vector Sheaves: An Axiomatic Approach to Differential Geometry. Volume II: Geometry. Examples and Applications. By Anastosios Mallios. Kluwer Academic Publishers, Dordrecht. (1998). 436 pages. $350.00, NLG 650.00, GBP 220.00 for 2 volume set.
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General preface (to both Volumes I,II). Preface (to Volume II). Acknowledgements. Contents of Volume I. II. Geometry. 6. Geometry of vector sheaves. $\mathcal{A}$-connections. 7. $\mathcal{A}$-connections. Local theory. 8. Curvature. 9. Characteristic classes. III. Examples and applications. 10. Classical theory. 11. Sheaves and presheaves with topological algebraic structures. Bibliography. Notational index. Subject index.

Focal Boundary Value Problems for Differential and Difference Equations. By Ravi P. Agarwal. Kluwer Academic Publishers, Dordrecht. (1998). 289 pages. $140.00, NLG 260.00, GBP 89.00.
Contents:

Preface. 1. Continuous problems. 1.1. Introduction. 1.2. Abel-Gontscharoff interpolation. 1.3. Solution of linear problems. 1.4. Existence and uniqueness. 1.5. Picard's and approximate Picard's methods. 1.6. Quasilinearization and approximate quasilinearization. 1.7. Integro-differential equations. 1.8. Delay-differential equations. 1.9. Necessary and sufficient conditions for right disfocality. 1.10. Tests for right and eventual disfocalities. 1.11. Green's functions. 1.12. Monotone convergence. 1.13. Uniqueness implies uniqueness. 1.14. Uniqueness implies existence. 1.15. Continuous dependence and differentiation with respect to boundary values. 1.16. Right disfocality implies right disfocality. 1.17. Right disfocality implies existence. 1.18. Differential inequalities imply existence. 1.19. Infinite interval problems. 1.20. Best possible results: Control theory methods. 1.21. Converse theorems. 1.22. Focal subfunctions. 1.23. Generalized Problem I. 1.24. Generalized Problem II. 1.25. A singular problem. 1.26. A problem with impulse effects. Comments and remarks. References. 2. Discrete problems. 2.1. Introduction. 2.2. Discrete Abel-Gontscharoff interpolation. 2.3. Existence and uniqueness. 2.4. Picard's and approximate Picard's methods. 2.5. Quasilinearization and approximate quasilinearization. 2.6. Necessary and sufficient conditions for right disfocality. 2.7. Tests for right and eventual disfocalities. 2.8. Green's functions. 2.9. Monotone convergence. 2.10. Continuous dependence and differentiation with respect to initial and boundary values. 2.11. Differences with respect to boundary points. 2.12. Uniqueness implies existence. 2.13. Generalized problems. Comments and remarks. References. Index.

Nondifferentiable Optimization and Polynomial Problems. By Naum Z. Shor. Kluwer Academic Publishers, Boston, MA. (1998). 394 pages. $179.00, NLG 330.00, GBP 113.00.
Contents:

Preface. 1. Elements of convex analysis, linear algebra, and graph theory. 2. Subgradient and ε-subgradient methods. 3. Subgradient-type methods with space dilation. 4. Elements of information and numerical complexity of polynomial extremal problems. 5. Decomposition methods based on nonsmooth optimization. 6. Algorithms for constructing optimal on volume ellipsoids and semidefinite programming. 7. The role of ellipsoid method for complexity analysis of combinatorial problems. 8. Semidefinite programming bounds for extremal graph problems. 9. Global minimization of polynomial functions and 17^{th} Hilbert problem. References.